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TI Integrated microchip lasers having regulatory function of frequency

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DT Patent

LA Chinese

IC ICM H01S003-16

ICS H01S003-10

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 75

FAN.CNT 1	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI CN 1298217 A 20010606 CN 1999-125311 19991130

PRAI CN 1999-125311 19991130

AB The integrated microchip laser is manufactured by determining the frequency-doubling or frequency-mixing phase-matched direction of non-linear optical crystal substrate, growing laser crystal microchip on the end face vertical to the phase-matched direction, and coating medium membrane. The substrate is Gd<sub>x</sub>Y<sub>1-x</sub>Al<sub>3</sub>(BO<sub>3</sub>)<sub>4</sub>, Ca<sub>4</sub>Gd<sub>x</sub>Y<sub>1-x</sub>O(BO<sub>3</sub>)<sub>3</sub>, Gd<sub>2</sub>xY<sub>2</sub>(1-x)(MoO<sub>4</sub>)<sub>3</sub>, or LaSc<sub>3</sub>(BO<sub>3</sub>)<sub>4</sub> (x = 0-1). The crystal microchip was formed by part or complete replacement of Gd<sup>3+</sup>, Y<sup>3+</sup>, or La<sup>3+</sup> with Nd<sup>3+</sup>, Er<sup>3+</sup>, Pr<sup>3+</sup>, or Yb<sup>3+</sup>, etc. The substrate may also be LiNbO<sub>3</sub>, and its laser crystal microchip is RE<sub>3+</sub>:MgO:LiNbO<sub>3</sub> or RE<sub>3+</sub>:ZnO:LiNbO<sub>3</sub> (RE = Nd, Er, Pr, Yb, or other rare earth ion). One passive Q-regulatory crystal microchip may be formed by doping Cr<sup>4+</sup> before formation of laser crystal microchip.

ST integrated microchip laser manuf, nonlinear optical crystal

IT Nonlinear optical materials

Solid state lasers

(integrated microchip lasers having regulatory function of frequency)

IT Rare earth metals, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(ions; integrated microchip lasers having regulatory function of frequency)

IT 14913-52-1, Neodymium ion (Nd<sup>3+</sup>), uses 15723-28-1, Chromium ion (Cr<sup>4+</sup>),

uses 18472-30-5, Erbium ion (Er<sup>3+</sup>), uses 18923-27-8, Ytterbium ion

(Yb<sup>3+</sup>), uses 22541-14-6, Praseodymium ion (Pr<sup>3+</sup>), uses

RL: TEM (Technical or engineered material use); USES (Uses)

(integrated microchip lasers having regulatory function of frequency)

IT 12031-63-9, Lithium niobium oxide (LiNbO<sub>3</sub>) 13813-76-8

130773-05-6

RL: DEV (Device component use); USES (Uses)

(substrate; integrated microchip lasers having regulatory function of frequency)